VERMONT
ENVIRONMENTAL CONSERVATION

Ompompanoosuc River

Watershed Description

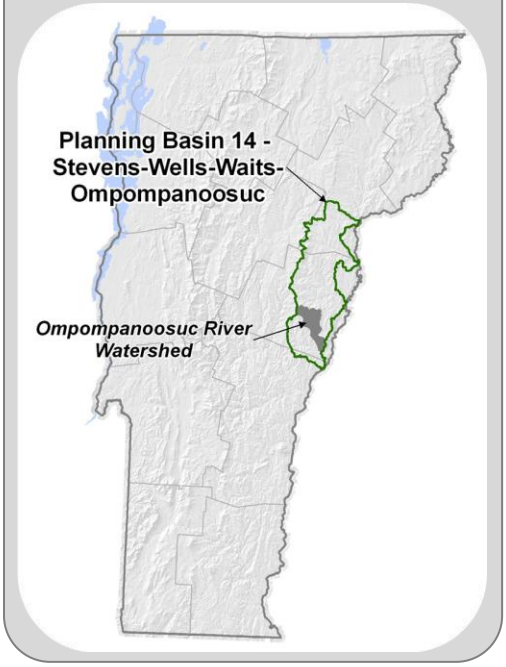
This bacteria TMDL summary includes a watershed reconnaissance survey, a set of site-specific potential bacteria sources, and action items for next steps towards removal of impairment. This summary applies to an 11.6-mile segment of the Ompompanoosuc River that flows in a primarily southerly direction through Vershire, West Fairlee, and Thetford (Figure 1). The downstream boundary of the study area is the U.S. Army Corps of Engineers (USACOE) dam, also known as the Union Village Dam in Thetford. Below the dam, the Ompompanoosuc flows six miles before draining to the Connecticut River.

The Ompompanoosuc River above the Union Village Dam is the focus of this summary because of elevated bacteria measurements obtained at sampling locations in this area. The mainstem originates in the village of Vershire Heights within the town of Vershire and flows southeasterly for six miles before turning in a southerly direction (ANR 2008). The watershed is primarily forested, with 87% forested land use, 8% agricultural, 1% developed, and 4% other uses, as shown in Figure 2 (based on 2006 Land Cover Analysis by NOAA-CSC). A large tributary of the Ompompanoosuc, the West Branch, enters the mainstem just above the Union Village Dam, has relatively lower bacteria concentrations, and was excluded from this summary.

The Ompompanoosuc supports moderate to high densities of wild brook trout and is stocked with rainbow and brown trout. Swimming is enjoyed at numerous locations along the river and in reservoirs, lakes, and ponds in the watershed (ANR 2008).

Waterbody Facts (VT14-03)

- **Towns:** Vershire, West Fairlee, Thetford, and Stratford
- **Impaired Segment Location:** USACOE beach area to Brimstone Corner (9.8 miles)
- **Impaired Segment Length:** 11.6 miles
- **Classification:** Class B
- **Watershed Area:** 43.5 square miles
- **Planning Basin:** 14 - "Little Rivers"



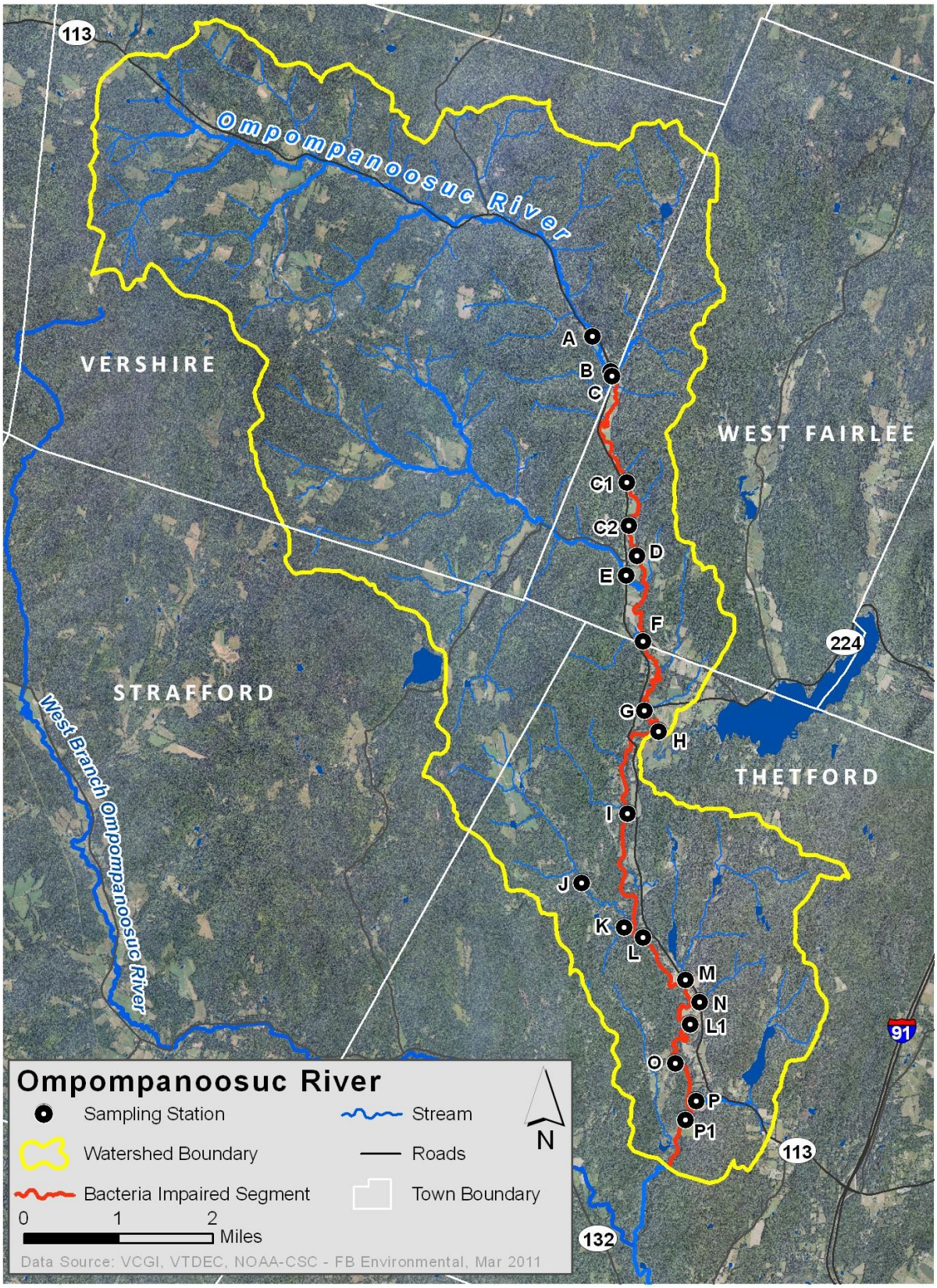


Figure 1: ***Map of the Ompompanoosuc River watershed with impaired segment and sampling stations indicated***

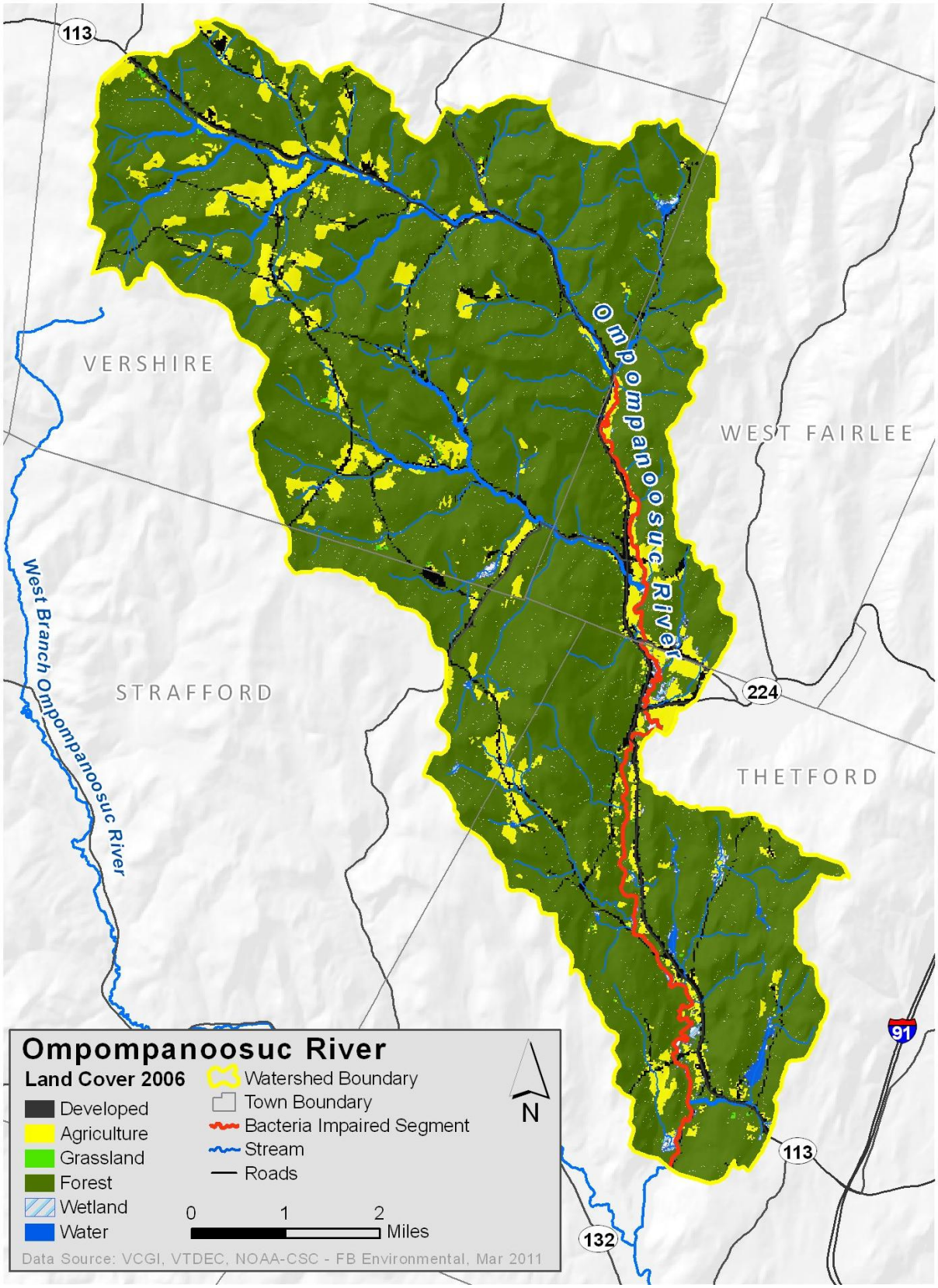


Figure 2: ***Map of the Ompompanoosuc River watershed with land cover and impaired segment indicated***

Why is a TMDL needed?

The Ompompanoosuc River is a Class B, cold water fishery with designated uses including swimming, fishing and boating (VTDEC 2008a). In 2006 and 2007, the Ompompanoosuc Watershed Council (OWC) collected samples of *E.coli* bacteria from June through August at 19 different locations (OWC 2006; OWC 2007). OWC sampling locations are shown in Figure 1.

Table 1 provides a summary of bacteria sampling results at a subset of sampling locations and years. The results show that *E.coli* levels were above the water quality criterion value (of 77 counts/100 mL) during numerous sampling events and at numerous different locations. Annual geometric mean *E. coli* concentration values were also above the proposed criterion value (of 126 counts/100 mL) at several locations.

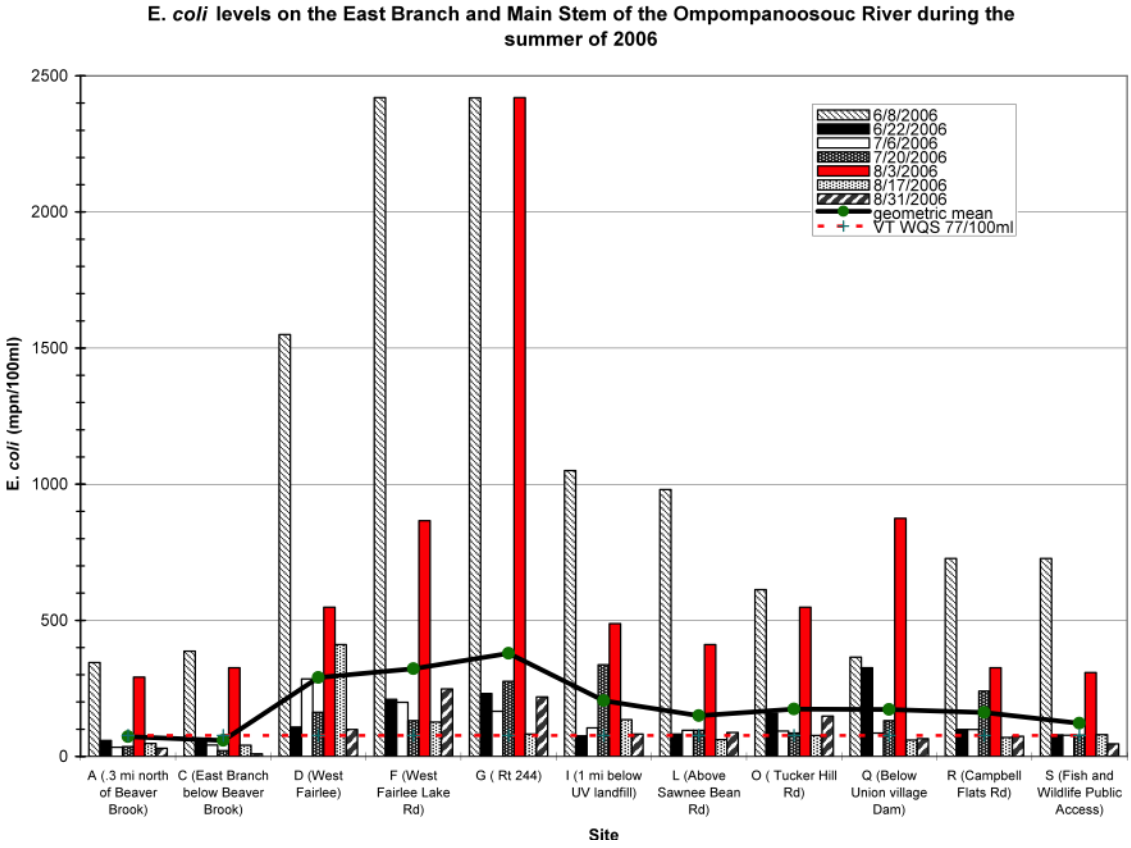
Due to the elevated bacteria measurements presented in Table 1, the Ompompanoosuc River, from the USACOE beach area to Brimstone Corner, did not meet Vermont's water quality standards, was identified as impaired and was placed on the 303(d) list (VTDEC, 2008b). The 303(d) listing states that use of the Ompompanoosuc River for contact recreation (i.e., swimming) is impaired. The Clean Water Act requires that all 303(d) listed waters undergo a TMDL assessment that describes the impairments and identifies the measures needed to restore water quality. The goal is for all waterbodies to comply with state water quality standards.

Watershed Reconnaissance Survey and Potential Bacteria Sources

A reconnaissance survey was conducted by FB Environmental Associates in the Ompompanoosuc River watershed on November 17-19, 2010. Guidance and assistance were provided by Tim Clear and Ben Copans from VTDEC. The survey was conducted by car with frequent stops for observations whenever access to the river was available.

The reconnaissance survey was focused on determining the nature and extent of potential pollutant sources through visual inspection and coordination with knowledgeable stakeholders. Potential sources of interest included farms and developed areas situated near the stream. Septic systems situated in the stream buffer were of particular interest because of their potential to convey bacteria to the river. The survey resulted in a preliminary list of potential pollutant hotspots that provide guidance towards next steps for restoring water quality in the Ompompanoosuc River.

Prior to conducting the survey, available bacteria data were reviewed. In 2006 and 2007, the Ompompanoosuc Watershed Council conducted sampling of the Ompompanoosuc and its tributaries and created summary reports (OWC 2006; OWC 2007). Figure 3 presents bacteria measurements (on the y-axis) verses sampling locations with increasing distance downstream (on the x-axis) and is taken from the OWC summary reports. This presentation format is useful because it enables the reader to visualize



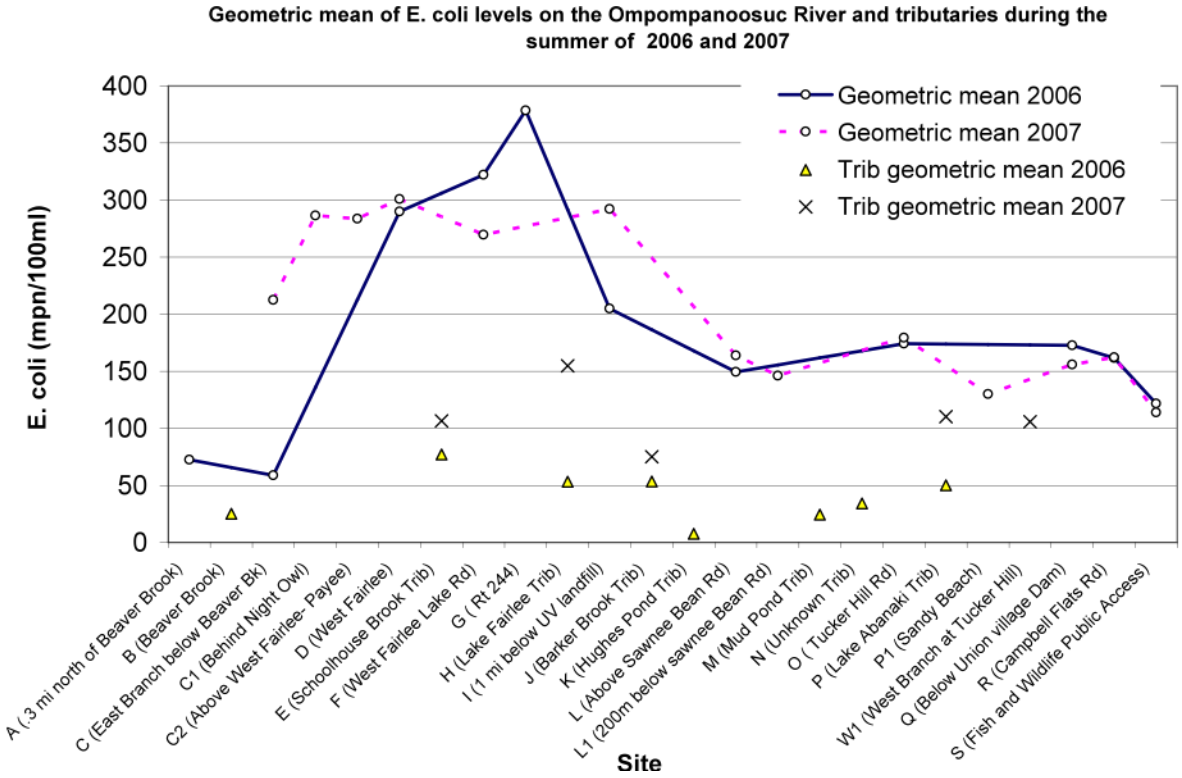


Figure 3: Plots of E.coli bacteria sampling results vs. locations along the Ompomp River for individual 2006 surveys and for geometric means of 2006 and 2007 surveys (Source: OWC 2006 & OWC 2007)

bacteria concentrations along the river, noting that the sampling locations in Figure 3 are shown aerially in Figure 1.

In 2006 (top plot of Figure 3), bacteria concentrations were observed to be higher from sampling locations D through G, as shown by the geometric mean concentration line. Wet weather events in 2006 corresponded to the highest bacteria concentration events, as shown by the elevated "red" and "dotted" bars (OWC 2006). These two general observations are useful to identification of bacteria sources because they indicate locations and conditions associated with elevated bacteria measurements.

In 2007, additional sampling (at locations C1 and C2) was conducted in the area between location C and D to support identification of bacteria sources. The lower plot of Figure 3 shows the geometric mean of bacteria measurements at each location and provides a comparison of 2006 and 2007 measurements. Elevated bacteria concentrations were observed further upstream in 2007 (shown as a dotted line) than in 2006 (shown as a solid line). In 2007 the Ompompanoosuc River reach with elevated bacteria concentrations appeared to extend further than in 2006 from upstream of location C to downstream of location I.

During both 2006 and 2007 bacteria measurements collected in the West Fairlee Village area were generally higher than those collected in the Thetford Village area (OWC 2007). Thus, it is reasonable to focus watershed reconnaissance activities on the West Fairlee Village area, specifically from approximately sampling locations C to I (Figure 3). This reach, shown in Figure 4, has several potential bacteria source areas including the following.

1. Agricultural areas along the river north of West Fairlee Village – potential animal waste runoff and manure management-related sources;

2. West Fairlee Village - potential septic system failure and agricultural sources;

3. Crossroad/West Fairlee Road tributary confluence – potential septic system failure and agricultural sources;

Each of these potential bacteria source is described below.

Potential Source Area 1: Agricultural Areas North of West Fairlee Village

Bacteria measurements collected in 2007 contained elevated bacteria measurements at sampling locations C, C1, and C2. These sampling locations are situated immediately north and upstream of West Fairlee Village and extend to the Beaver Brook confluence, as shown in Figure 4. This reach of the Ompompanoosuc River has agricultural activity, consisting primarily of hay fields and livestock operations, situated close to the River resulting in a narrow riparian buffer.

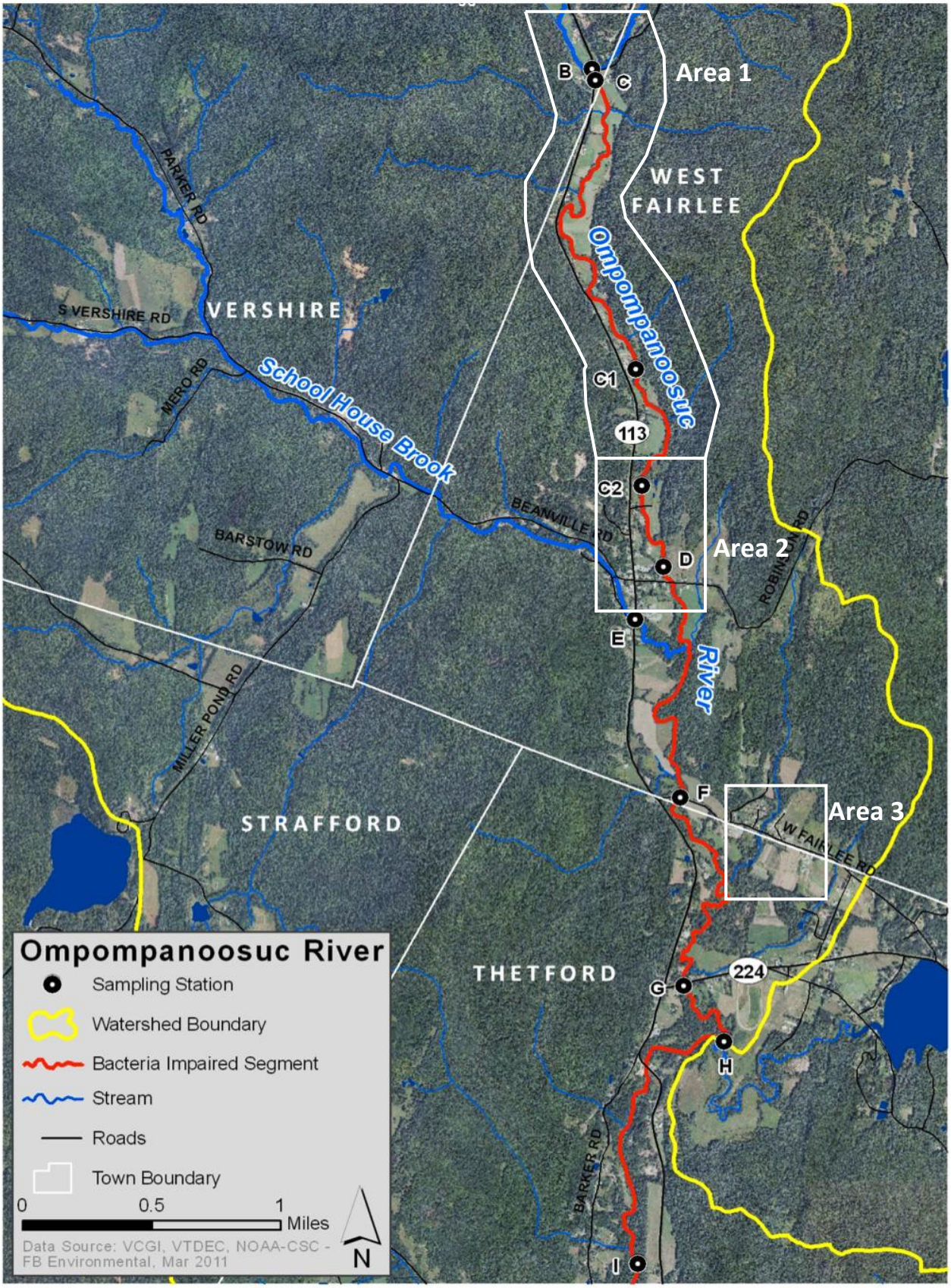


Figure 4*: Aerial map of three potential bacteria source areas in the Ompompanoosuc River watershed with sampling locations indicated*

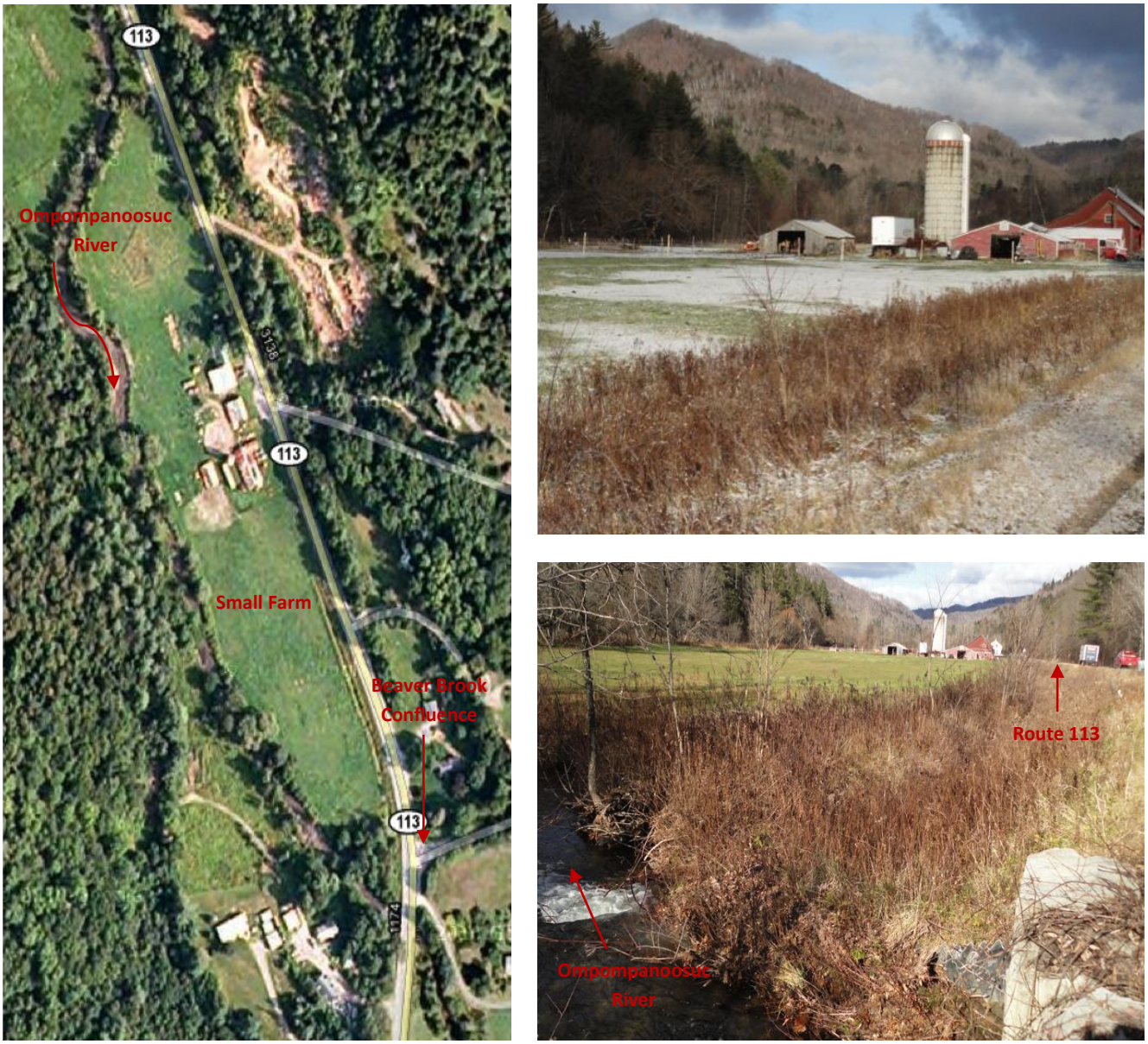


Figure 5: Aerial map and photographs of Site 1 example – Farm immediately upstream of the Beaver Brook confluence

An example of a farm that could potentially contribute bacteria to the Ompompanoosuc is provided in Figure 5. The farm shown in Figure 5 is a livestock operation situated close to the river immediately upstream of the confluence of Beaver Brook. The farm is situated between Route 113 and the Ompompanoosuc River and the river passes under Route 113 at the southern boundary of the farm.

As shown in Figure 6, the riparian buffer is narrow throughout this reach of the Ompompanoosuc with agricultural activities situated close to the river. Manure management and stream buffer practices should be reviewed at farms along the Ompompanoosuc River. Livestock maintenance (including direct access to the river) and manure applications to croplands adjacent to the river likely result in fecal bacteria contributions in this area. Several on-site improvement projects may be appropriate to reduce pollutant runoff from farms to the river. The Natural Resources Conservation Service, the Consolidated Farm Services Agency, USEPA, and other agencies can provide technical assistance and partial funding to support these projects. Potentially appropriate improvement projects may include fencing livestock out of the stream, constructing manure storage facilities, and improving barnyard maintenance.

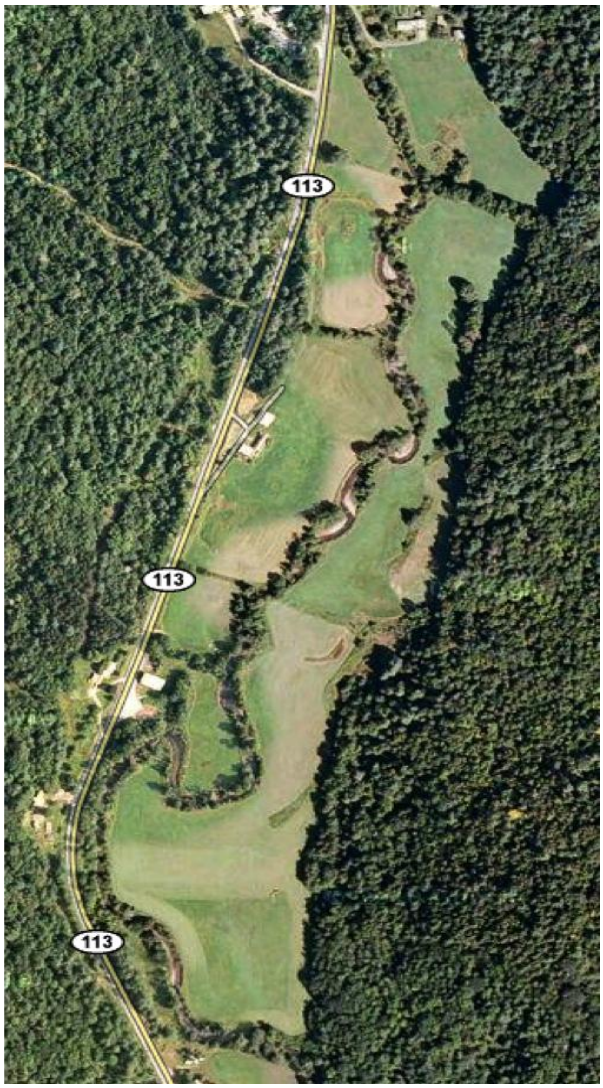


Figure 6: Aerial map of Site 1 – Farmland north of West Fairlee Village

Potential Source Area 2: West Fairlee Village

There are numerous residences and several farms situated near the Ompompanoosuc River in West Fairlee Village, as shown in Figure 7. This area includes sampling locations C and D, where elevated bacteria measurements have been observed. Residences are situated along the west bank of the river and several examples are shown in Figure 8. The Ompompanoosuc River flows immediately behind the small residences shown in the top photograph in Figure 8. The white residence is across Route 113 from the river and had a white PVC pipe with water flowing out into a roadway swale (that drains to the river) indicating a potential illicit discharge.

Due to the close proximity of the West Fairlee Village septic systems to the river, they should be investigated to ensure that they are functioning properly. In addition, stormwater runoff and illicit

discharges should be investigated to assess potential adverse impacts of stormwater runoff to this reach of the Ompompanoosuc River.

Figure 7: Aerial map of Site 2 – West Fairlee Village with potential source areas indicated

Figure 8: Photographs of Site 2 – Homes near the Ompompanoosuc River in West Fairlee Village

Figure 9: Photographs of Site 2 – Farms near the Ompomp in West Fairlee Village

There are also agricultural activities along the east bank of the Ompompanoosuc in West Fairlee Village, as shown in Figure 9. The top photograph in Figure 9 was taken at sampling location C2 and the lower two photographs were taken at sampling location D. Manure was visible at each location suggesting that transport of animal waste during rainfall events is likely to occur. Agricultural activities including livestock maintenance and manure applications to croplands adjacent to the river likely result in fecal bacteria contributions in this area. Several on-site improvement projects may be appropriate to reduce pollutant runoff from farms to the river. The Natural Resources Conservation Service, the Consolidated Farm Services Agency, USEPA, and other agencies can provide technical assistance and partial funding to support these projects. Potentially appropriate improvement projects may include constructing manure storage facilities and improving barnyard maintenance.

Potential Source Area 3 – Crossroad/West Fairlee Road Tributary

A small tributary flows southward crossing Crossroad/West Fairlee Road and joining the Ompompanoosuc River just north of the Lake Fairlee tributary (Figure 4). As shown in Figure 10, this tributary passes close by a dense residential area (Georges Way) and a farm (Crossroad Farm). Each of these areas may be contributing bacteria to the tributary and, eventually, to the Ompompanoosuc River mainstem. The residences on Georges Way are shown in the two photographs on the bottom of Figure 10. In the photograph on the left, the residences are shown situated close to and above the tributary.

A permit application to replace a failing wastewater disposal system serving 3 three-bedroom residences on Lots 11, 12, 13 of Cold Spring Mobile Home Park on Georges Way in West Fairlee was submitted. The new wastewater system has been approved and the installation certification has been received by DEC Wastewater Division. Due to the close proximate of the Georges Way residences and the Crossroad Farm to this Ompompanoosuc tributary, testing of the remaining systems in the park should be conducted.

Figure 10: Aerial Map and Photographs of Site 3 – Homes and Farm along West Fairlee Road Tributary

Recommended Next Steps

Recommended next steps include investigating potentially failing septic systems, implementing agricultural best management practices, as needed, and conducting stream buffer restoration activities. These next steps have been identified during this investigation and by previous investigators (e.g., OWC 2007; ANR 2008; and White River NRCD 2010). Recommended next steps include:

- Bacteria Monitoring Program – Conduct a monitoring program featuring locations A, B, C, C1, C2, D, E, F, G, H, I and additional downstream sampling locations, similar to the 2006 and 2007 surveys. Sampling upstream and downstream of potential on-site septic and agricultural sources (a practice known as "bracket sampling") may also be beneficial for identifying and quantifying sources. Bracket sampling may be particularly useful between sites D and L, where some of the highest bacteria levels have been measured. We also recommend adding a sampling location near the confluence of the Crossroads/West Fairlee Road tributary with the Ompompanoosuc River to support assessment of this potential source area (as shown in Figure 10).
- Inspect and Mitigate Failing Septic Systems – Conduct a survey of septic systems in the West Fairlee Village area, the Georges Way area and in other locations near the river. The Town of West Fairlee recognizes that much of the land surrounding the Ompompanoosuc River is considered wet soil and can pose significant problems for septic waste. The town plan recommends that the health officer conduct random site visits of West Fairlee properties to detect wastewater system failure and that the town provide educational materials to homeowners regarding septic systems (West Fairlee 2005). We recommend that a systematic program be adopted to inspect all septic systems adjacent to the Ompompanoosuc River and its tributaries. Town officials should coordinate with Vermont environmental enforcement officers to identify and replace failing systems. The town should also conduct a review and potentially modify existing on-site septic ordinances.
- Agricultural - Farms situated near the Ompompanoosuc River, such as those described in potential source areas 1, 2, and 3 should coordinate with the USDA, NRCS and other agencies to assess the extent of agricultural waste application and potentially reduce applications through improved nutrient management planning. These farm operations should also evaluate riparian buffer and identify opportunities to remove areas near the river from production.
- Riparian Corridor – Conduct riparian corridor projects and seek to enhance buffer through a combination of buffer plantings, land conservation, and improved agricultural practices. Corridor land use and lack of riparian buffer were identified in a geomorphic assessment report as source of great potential for negative impacts to the Ompompanoosuc River (Bear Creek 1009). The White River Natural Resource Conservation District is reportedly working with the Town of West Fairlee and the Strafford Conservation Commission to coordinate with riparian land owners

and conduct riparian buffer restoration projects along the Ompompanoosuc (White River NRCD 2010).

The steps outlined above should be continued and enhanced to focus on the goals of bacteria TMDL implementation. If implemented, these actions will provide a strong basis toward the goal of mitigating bacteria sources and meeting water quality standards in the Ompompanoosuc River.

Bacteria Data

Vermont's current criteria for bacteria are more conservative than those recommended by EPA. For Class B waters, VTDEC currently utilizes a single sample criterion of 77 organisms/100ml. However, the state is in the process of revising their bacteria WQS to better align with EPA recommendations. For Class B waters, EPA has recommended that the most conservative *E.coli*-based criterion be a geometric mean of 126 organisms/100ml, and a single sample of 235 organisms/100ml. In Table 1 below, bacteria data were compared to both the current and proposed *E.coli* standards in Vermont.

Ompompanoosuc River, USACOE beach area to Brimstone Corner

***WB ID*:** VT14-03

Characteristics: Class B

Impairment: *E. coli* (organisms/100mL)

Current Water Quality Criteria for E. coli:

Single sample: 77 organisms/100 mL

Proposed Water Quality Criteria for E. coli:

Single sample: 235 organisms/100 mL

Geometric mean: 126 organisms/100 mL

Percent Reduction to meet TMDL (Current):

Single Sample: **97%**

Percent Reduction to meet TMDL (Proposed):

Single sample: **90%**

Geometric mean: **42%**

Data: 2006 – 2007, Ompompanoosuc Watershed Council

Table 1: *E.coli* (organisms/100 mL) Data for Ompompanoosuc River (2006-2007) and Geometric Mean (organisms/100mL) for each Station based on Calendar Year.

Station Name	Station Location	Date	Result	Geometric Mean**
C1	East Branch of the Ompompanoosuc River behind the Night owl.	8/23/2007	31	220
C1	East Branch of the Ompompanoosuc River behind the Night owl.	8/9/2007	365	
C1	East Branch of the Ompompanoosuc River behind the Night owl.	7/26/2007	411	
C1	East Branch of the Ompompanoosuc River behind the Night owl.	6/28/2007	649	
C1	East Branch of the Ompompanoosuc River behind the Night owl.	6/14/2007	387	
C1	East Branch of the Ompompanoosuc River behind the Night owl.	5/31/2007	96	

*Shaded cells indicate single sample and geometric mean used to calculate percent reduction.

**Only geometric mean values calculated with 5 data points or more are used to determine percent reduction.

Table 1: *E.coli* (organisms/100 mL) Data for Ompompanoosuc River (2006-2007) and Geometric Mean (organisms/100mL) for each Station based on Calendar Year (continued).

Station Name	Station Location	Date	Result	Geometric Mean**
C2	East Branch of the Ompompanoosuc River on Corey PayeÆs property.	8/23/2007	25	215
C2	East Branch of the Ompompanoosuc River on Corey PayeÆs property.	8/9/2007	285	
C2	East Branch of the Ompompanoosuc River on Corey PayeÆs property.	7/26/2007	816	
C2	East Branch of the Ompompanoosuc River on Corey PayeÆs property.	6/28/2007	980	
C2	East Branch of the Ompompanoosuc River on Corey PayeÆs property.	6/14/2007	228	
C2	East Branch of the Ompompanoosuc River on Corey PayeÆs property.	5/31/2007	75	
H	Lake Fairlee Brook just above the confluence with the East Branch of the Ompompanoosuc River. Hike in through Post Mills Natural Area along the ridge to the confluence. Sample is taken about 40 feet from the confluence to prevent any water mixing.	8/23/2007	328	150
H	Lake Fairlee Brook just above the confluence with the East Branch of the Ompompanoosuc River. Hike in through Post Mills Natural Area along the ridge to the confluence. Sample is taken about 40 feet from the confluence to prevent any water mixing.	8/9/2007	116	
H	Lake Fairlee Brook just above the confluence with the East Branch of the Ompompanoosuc River. Hike in through Post Mills Natural Area along the ridge to the confluence. Sample is taken about 40 feet from the confluence to prevent any water mixing.	7/26/2007	78	
H	Lake Fairlee Brook just above the confluence with the East Branch of the Ompompanoosuc River. Hike in through Post Mills Natural Area along the ridge to the confluence. Sample is taken about 40 feet from the confluence to prevent any water mixing.	6/28/2007	238	
H	Lake Fairlee Brook just above the confluence with the East Branch of the Ompompanoosuc River. Hike in through Post Mills Natural Area along the ridge to the confluence. Sample is taken about 40 feet from the confluence to prevent any water mixing.	6/14/2007	72	
H	Lake Fairlee Brook just above the confluence with the East Branch of the Ompompanoosuc River. Hike in through Post Mills Natural Area along the ridge to the confluence. Sample is taken about 40 feet from the confluence to prevent any water mixing.	5/31/2007	225	

*Shaded cells indicate single sample and geometric mean used to calculate percent reduction.

**Only geometric mean values calculated with 5 data points or more are used to determine percent reduction.

Table 1: *E.coli* (organisms/100 mL) Data for Ompompanoosuc River (2006-2007) and Geometric Mean (organisms/100mL) for each Station based on Calendar Year (continued).

Station Name	Station Location	Date	Result	Geometric Mean**
I	Ompompanoosuc River accessed from 921 Barker Road. Turn into the driveway of 921 Barker Rd and park at the second house. Hike down to the bottom of the field and there is a trail down to the river. Sample site is just below a bedrock outcrop.	8/23/2007	91	
I	Ompompanoosuc River accessed from 921 Barker Road. Turn into the driveway of 921 Barker Rd and park at the second house. Hike down to the bottom of the field and there is a trail down to the river. Sample site is just below a bedrock outcrop.	8/9/2007	308	
I	Ompompanoosuc River accessed from 921 Barker Road. Turn into the driveway of 921 Barker Rd and park at the second house. Hike down to the bottom of the field and there is a trail down to the river. Sample site is just below a bedrock outcrop.	7/26/2007	131	
I	Ompompanoosuc River accessed from 921 Barker Road. Turn into the driveway of 921 Barker Rd and park at the second house. Hike down to the bottom of the field and there is a trail down to the river. Sample site is just below a bedrock outcrop.	7/12/2007	2420	298
I	Ompompanoosuc River accessed from 921 Barker Road. Turn into the driveway of 921 Barker Rd and park at the second house. Hike down to the bottom of the field and there is a trail down to the river. Sample site is just below a bedrock outcrop.	6/28/2007	649	
I	Ompompanoosuc River accessed from 921 Barker Road. Turn into the driveway of 921 Barker Rd and park at the second house. Hike down to the bottom of the field and there is a trail down to the river. Sample site is just below a bedrock outcrop.	6/14/2007	161	
I	Ompompanoosuc River accessed from 921 Barker Road. Turn into the driveway of 921 Barker Rd and park at the second house. Hike down to the bottom of the field and there is a trail down to the river. Sample site is just below a bedrock outcrop.	5/31/2007	225	

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Table 1: *E.coli* (organisms/100 mL) Data for Ompompanoosuc River (2006-2007) and Geometric Mean (organisms/100mL) for each Station based on Calendar Year (continued).

Station Name	Station Location	Date	Result	Geometric Mean**
J	Barker Brook, on the upstream side of the Barker Brook Rd culvert-	8/23/2007	6	74
J	Barker Brook, on the upstream side of the Barker Brook Rd culvert-	8/9/2007	517	
J	Barker Brook, on the upstream side of the Barker Brook Rd culvert-	7/26/2007	44	
J	Barker Brook, on the upstream side of the Barker Brook Rd culvert-	7/12/2007	238	
J	Barker Brook, on the upstream side of the Barker Brook Rd culvert-	6/28/2007	135	
J	Barker Brook, on the upstream side of the Barker Brook Rd culvert-	6/14/2007	30	
J	Barker Brook, on the upstream side of the Barker Brook Rd culvert-	5/31/2007	93	
L	E. Brch Ompom upstrm from Sawanee Bean Bridge. Site is .4 miles frm Rt 113 at sharp corner near driveway with mailbox ôOAKö. Two small boulders at side of road mark trail head.	8/23/2007	56	164
L	E. Brch Ompom upstrm from Sawanee Bean Bridge. Site is .4 miles frm Rt 113 at sharp corner near driveway with mailbox ôOAKö. Two small boulders at side of road mark trail head.	8/9/2007	411	
L	E. Brch Ompom upstrm from Sawanee Bean Bridge. Site is .4 miles frm Rt 113 at sharp corner near driveway with mailbox ôOAKö. Two small boulders at side of road mark trail head.	7/26/2007	96	
L	E. Brch Ompom upstrm from Sawanee Bean Bridge. Site is .4 miles frm Rt 113 at sharp corner near driveway with mailbox ôOAKö. Two small boulders at side of road mark trail head.	7/12/2007	2420	
L	E. Brch Ompom upstrm from Sawanee Bean Bridge. Site is .4 miles frm Rt 113 at sharp corner near driveway with mailbox ôOAKö. Two small boulders at side of road mark trail head.	6/28/2007	110	
L	E. Brch Ompom upstrm from Sawanee Bean Bridge. Site is .4 miles frm Rt 113 at sharp corner near driveway with mailbox ôOAKö. Two small boulders at side of road mark trail head.	6/14/2007	93	
L	E. Brch Ompom upstrm from Sawanee Bean Bridge. Site is .4 miles frm Rt 113 at sharp corner near driveway with mailbox ôOAKö. Two small boulders at side of road mark trail head.	5/31/2007	58	

*Shaded cells indicate single sample and geometric mean used to calculate percent reduction.

**Only geometric mean values calculated with 5 data points or more are used to determine percent reduction.

Table 1: *E.coli* (organisms/100 mL) Data for Ompompanoosuc River (2006-2007) and Geometric Mean (organisms/100mL) for each Station based on Calendar Year (continued).

Station Name	Station Location	Date	Result	Geometric Mean**
L1	East Branch Above Wetland between Sawanee Bean Bridge and Tucker Hill Rd	8/23/2007	36	
L1	East Branch Above Wetland between Sawanee Bean Bridge and Tucker Hill Rd	8/9/2007	365	
L1	East Branch Above Wetland between Sawanee Bean Bridge and Tucker Hill Rd	7/26/2007	111	
L1	East Branch Above Wetland between Sawanee Bean Bridge and Tucker Hill Rd	7/12/2007	2420	148
L1	East Branch Above Wetland between Sawanee Bean Bridge and Tucker Hill Rd	6/28/2007	135	
L1	East Branch Above Wetland between Sawanee Bean Bridge and Tucker Hill Rd	6/14/2007	88	
L1	East Branch Above Wetland between Sawanee Bean Bridge and Tucker Hill Rd	5/31/2007	37	
O	East Branch of the Ompompanoosuc River at Tucker Hill Road. West Side of the covered bridge just above the falls and about 100 feet down stream from the bridge.	8/23/2007	52	
O	East Branch of the Ompompanoosuc River at Tucker Hill Road. West Side of the covered bridge just above the falls and about 100 feet down stream from the bridge.	8/9/2007	1050	
O	East Branch of the Ompompanoosuc River at Tucker Hill Road. West Side of the covered bridge just above the falls and about 100 feet down stream from the bridge.	7/26/2007	58	
O	East Branch of the Ompompanoosuc River at Tucker Hill Road. West Side of the covered bridge just above the falls and about 100 feet down stream from the bridge.	7/12/2007	2420	179
O	East Branch of the Ompompanoosuc River at Tucker Hill Road. West Side of the covered bridge just above the falls and about 100 feet down stream from the bridge.	6/28/2007	133	
O	East Branch of the Ompompanoosuc River at Tucker Hill Road. West Side of the covered bridge just above the falls and about 100 feet down stream from the bridge.	6/14/2007	78	
O	East Branch of the Ompompanoosuc River at Tucker Hill Road. West Side of the covered bridge just above the falls and about 100 feet down stream from the bridge.	5/31/2007	73	

*Shaded cells indicate single sample and geometric mean used to calculate percent reduction.

**Only geometric mean values calculated with 5 data points or more are used to determine percent reduction.

Table 1: *E.coli* (organisms/100 mL) Data for Ompompanoosuc River (2006-2007) and Geometric Mean (organisms/100mL) for each Station based on Calendar Year (continued).

Station Name	Station Location	Date	Result	Geometric Mean**
P	Lake Abenaki Tributary at the Buzzelle Bridge Road- upstream of the culvert.	8/23/2007	13	
P	Lake Abenaki Tributary at the Buzzelle Bridge Road- upstream of the culvert.	8/9/2007	980	
P	Lake Abenaki Tributary at the Buzzelle Bridge Road- upstream of the culvert.	7/26/2007	126	
P	Lake Abenaki Tributary at the Buzzelle Bridge Road- upstream of the culvert.	7/12/2007	921	105
P	Lake Abenaki Tributary at the Buzzelle Bridge Road- upstream of the culvert.	6/28/2007	15	
P	Lake Abenaki Tributary at the Buzzelle Bridge Road- upstream of the culvert.	6/14/2007	35	
P	Lake Abenaki Tributary at the Buzzelle Bridge Road- upstream of the culvert.	5/31/2007	179	
P1	Sandy Beach off of Buzzell Bridge Road. Sample site is a the upstream end of the site at rock outcropping.	8/23/2007	19	
P1	Sandy Beach off of Buzzell Bridge Road. Sample site is a the upstream end of the site at rock outcropping.	8/9/2007	816	
P1	Sandy Beach off of Buzzell Bridge Road. Sample site is a the upstream end of the site at rock outcropping.	7/26/2007	59	
P1	Sandy Beach off of Buzzell Bridge Road. Sample site is a the upstream end of the site at rock outcropping.	7/12/2007	2420	130
P1	Sandy Beach off of Buzzell Bridge Road. Sample site is a the upstream end of the site at rock outcropping.	6/28/2007	104	
P1	Sandy Beach off of Buzzell Bridge Road. Sample site is a the upstream end of the site at rock outcropping.	6/14/2007	57	
P1	Sandy Beach off of Buzzell Bridge Road. Sample site is a the upstream end of the site at rock outcropping.	5/31/2007	48	
K	Sawnee Bean Rd Tributary upstream of culvert.	8/31/2006	4	
K	Sawnee Bean Rd Tributary upstream of culvert.	8/17/2006	1	
K	Sawnee Bean Rd Tributary upstream of culvert.	8/3/2006	13	
K	Sawnee Bean Rd Tributary upstream of culvert.	7/20/2006	11	8
K	Sawnee Bean Rd Tributary upstream of culvert.	7/6/2006	9	
K	Sawnee Bean Rd Tributary upstream of culvert.	6/22/2006	6	
K	Sawnee Bean Rd Tributary upstream of culvert.	6/8/2006	45	

*Shaded cells indicate single sample and geometric mean used to calculate percent reduction.

**Only geometric mean values calculated with 5 data points or more are used to determine percent reduction.

Table 1: *E.coli* (organisms/100 mL) Data for Ompompanoosuc River (2006-2007) and Geometric Mean (organisms/100mL) for each Station based on Calendar Year.

Station Name	Station Location	Date	Result	Geometric Mean**
M	Mud Pond Tributary where it crosses Route 113. Park at Alden Palmer's house and sample at the downstream side of the culvert from the lawn.	8/31/2006	10	
M	Mud Pond Tributary where it crosses Route 113. Park at Alden Palmer's house and sample at the downstream side of the culvert from the lawn.	8/17/2006	15	
M	Mud Pond Tributary where it crosses Route 113. Park at Alden Palmer's house and sample at the downstream side of the culvert from the lawn.	8/3/2006	20	
M	Mud Pond Tributary where it crosses Route 113. Park at Alden Palmer's house and sample at the downstream side of the culvert from the lawn.	7/20/2006	10	25
M	Mud Pond Tributary where it crosses Route 113. Park at Alden Palmer's house and sample at the downstream side of the culvert from the lawn.	7/6/2006	48	
M	Mud Pond Tributary where it crosses Route 113. Park at Alden Palmer's house and sample at the downstream side of the culvert from the lawn.	6/22/2006	64	
M	Mud Pond Tributary where it crosses Route 113. Park at Alden Palmer's house and sample at the downstream side of the culvert from the lawn.	6/8/2006	60	
N	Small unnamed stream just south of site M and near transfer station. Stream goes though lawn.	8/31/2006	10	
N	Small unnamed stream just south of site M and near transfer station. Stream goes though lawn.	8/17/2006	160	
N	Small unnamed stream just south of site M and near transfer station. Stream goes though lawn.	8/3/2006	67	
N	Small unnamed stream just south of site M and near transfer station. Stream goes though lawn.	7/20/2006	73	35
N	Small unnamed stream just south of site M and near transfer station. Stream goes though lawn.	7/6/2006	7	
N	Small unnamed stream just south of site M and near transfer station. Stream goes though lawn.	6/22/2006	30	
N	Small unnamed stream just south of site M and near transfer station. Stream goes though lawn.	6/8/2006	37	

*Shaded cells indicate single sample and geometric mean used to calculate percent reduction.

**Only geometric mean values calculated with 5 data points or more are used to determine percent reduction.

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